

REMARKS/ARGUMENTS

Reconsideration of the application is respectfully requested for the following reasons:

Rejection of Claims Under 35 U.S.C. §102(b)

Claims 1-9, 16-19 and 22 are rejected under 35 U.S.C. §102(b) as being anticipated by Uzoh (US 6,140,234).

Applicants respectfully traverse this rejection. This rejection is traversed because Uzoh actually fails to teach every element of the claimed invention. According to MPEP §2131, the teaching of Uzoh is not sufficient to render the claimed invention unpatentable.

Particularly, Uzoh fails to disclose the steps of planarizing the surface of said wafer to remove redundant metal of said metal interconnect layer, wherein an exposed part of said thin film at an edge of said wafer is exposed after planarizing said metal interconnect layer. The copper seed layer 6 of Uzoh is not a metal interconnect layer. Instead, the copper seed layer 6 of Uzoh is a seed layer or a portion of the conductive metal/interconnect layer 8. It is quite obvious that one with ordinary skill in the art would not treat the copper seed layer 6 as a metal interconnect layer. Although the copper seed layer 6 is planarized to remove the horizontal portions on the substrate between recesses 2 to expose the barrier layer 4, the conductive metal/interconnect layer 8 is not formed yet. Only after the horizontal portions of the copper seed layer 6 on the substrate between recesses 2 are removed, the conductive metal/interconnect layer 8 can be selectively plated on the copper seed layer 6 in the recesses 2. However, the horizontal portions of the barrier layer 4 are already exposed before the

conductive metal/ interconnect layer 8 is planarized. The exposure of the barrier layer 4 does not result from the planarization of the conductive metal/ interconnect layer 8. Thus it is quite clear that the teaching of Uzoh does not teach every element of claim 1 of the claimed invention.

With respect to claim 16, Uzoh fails to disclose the steps of removing said barrier layer not covered by said metal interconnect layer, annealing said wafer, and planarizing the metal interconnect layer and removing the redundant metal on the wafer. The portion of barrier layer 4 of Uzoh not covered by the conductive metal/ interconnect layer 8 is removed during the planarization of the conductive metal/ interconnect layer 8, not before it.

Thus it is quite clear that the teaching of Uzoh does not teach every element of the claimed invention. According to MPEP §2131, To Anticipate A Claim, The Reference Must Teach Every Element Of The Claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. It is quite clearly that the teaching of Uzoh actually fails to teach every element of the claimed invention and one with ordinary skill in the art would not anticipate the claimed invention by the teaching of Uzoh.

Rejection of Claims Under 35 U.S.C. §103(a)

Claims 10, 11, 13, 15, 20, 21, 23 and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over Uzoh et al. in view of Emami (US 6,857,941). Applicants respectfully traverse this rejection since Emami does not teach the element which Uzoh fails to disclose. The backside material removal or the drying of the wafer which Emami discloses are not the elements which Uzoh fails to teach. According to

MPEP §2143, the combination of Uzoh and Emami must teach or suggest all the claim limitations to establish a prima facie case of obviousness.

Claims 12, 24 and 25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Uzoh et al. in view of Vines (US 6,048,789). Applicants respectfully traverse this rejection since Vines does not teach the element which Uzoh fails to disclose. Claim 28 is rejected under 35 U.S.C. §103(a) as being unpatentable over Uzoh et al. and further in view of Kaufman (US 2004/009671A1). Applicants respectfully traverse this rejection since Kaufman does not teach the element which Uzoh fails to disclose. Claims 14, 27 and 28 are rejected under 35 U.S.C. §103(a) as being unpatentable over Uzoh et al., Emami, Vines in view of Sugai (JP 2001044156). Applicants respectfully traverse this rejection since Sugai does not teach the element which the combination of Uzoh, Emami and Vines fails to disclose.

According to MPEP §2143, Basic Requirements of a Prima Facie Case of Obviousness[R-1], To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Since the combination of Uzoh and Emami, the combination of Uzoh and Vines, the combination of Uzoh and Kaufman, and the combination of Uzoh, Emami, Vines and Sugai do not teach all the

limitations of the claimed invention, the combination of Uzoh and Emami, the combination of Uzoh and Vines, the combination of Uzoh and Kaufman, and the combination of Uzoh, Emami, Vines and Sugai are insufficient to render the claimed invention unpatentable.

Conclusion

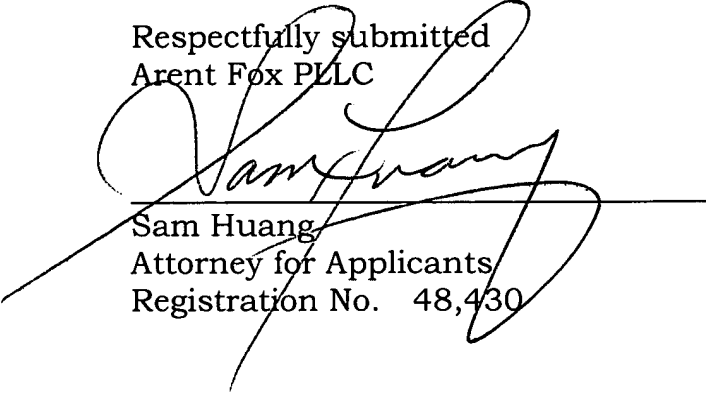
In light of the above remarks to the claims, Applicant contends that the claimed invention is patentable thereover. The claims are in condition for favorable consideration and Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Should the Examiner determine that any further action is necessary to place this application into better form, the Examiner is encouraged to telephone the undersigned representative at the number listed below.

In the event this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of time.

The Commissioner is hereby authorized to charge any fee deficiency or credit any overpayment associated with this communication to Deposit Account No. 01-2300, referring to client-matter number 025796-00006.

Respectfully submitted
Arent Fox PLLC



Sam Huang
Attorney for Applicants
Registration No. 48,430

Customer No. 004372
1050 Connecticut Ave., N.W.
Suite 400
Washington, D.C. 20036-5339
Telephone No. (202) 715-8485
Facsimile No. (202) 857-6395
SH:cpa